Shopping Cart

Overview

Please write code delivering the acceptance criterias (AC) that follow.
It is designed to be a straightforward coding exercise, and it should take you no more than 90 minutes.

What we are looking for:

Code Design: We are keen to understand how you design your code.
We do not expect a command line, web or any other type of application.
Invocation should be via tests.

Tests: We value unit testing highly.
As such, your solution should have tests with sufficient test coverage, beyond the ACs below.

Simplicity: We value simplicity as an architectural virtue.
Your solutions should reflect the difficulty of the assigned task, and no more.
Layers of abstraction, patterns, or architectural features that aren't specifically called for should not be included.

Self-explanatory code: The code must speak for itself.
Long comments explaining the solution is a sign the solution is insufficiently simple.

The problem statement - Acceptance Criteria

Create a shopping cart, add products to it, calculate the total price and sales tax for the items contained in the cart.

AC 0 : Add a single product.

Given:
* An empty shopping cart
* And a product, *Dove Soap* with a unit price of *39.99*

When:
* The user adds a single *Dove Soap* to the shopping cart

Then:
* The shopping cart should a single line item with 1 Dove Soap with a unit price of *39.99*
* And the shopping cart's total price should equal *39.99*
* All totals should be rounded up to 2 decimal places, i.e. *0.565* should result in *0.57* but *0.5649* should result in 0.56.
  * You can [follow this link](#) if you want more details.

AC 1 : Add many products.

Given:
* An empty shopping cart
* And a product, *Dove Soap* with a unit price of *39.99*

When:

* The user adds 5 *Dove Soaps* to the shopping cart
* And then adds another 3 *Dove Soaps* to the shopping cart

Then:
* The shopping cart should contain a single line item
* The shopping cart should contain 8 Dove Soaps each with a unit price of
39.99
* And the shopping cart's total price should equal *319.92*
* All totals should be rounded up to 2 decimal places as described in AC 0.

AC 2 : Calculate tax rate with many products

Given:
* An empty shopping cart
* And a product, *Dove Soap* with a unit price of *39.99*
* And another product, *Axe Deo* with a unit price of *99.99*
* And a sales tax rate of **12.5%** applicable to all products equally

When:
* The user adds 2 *Dove Soaps* to the shopping cart
* And then adds 2 *Axe Deos* to the shopping cart

Then:
* The shopping cart should contain a line item with 2 Dove Soaps each with a
unit price of *39.99*
* And the shopping cart should contain a line item with 2 Axe Deos each with a
unit price of *99.99*
* And the total sales tax amount for the shopping cart should equal *35.00*
* And the shopping cart's total price should equal *314.96*
* All totals should be rounded up to 2 decimal places as described in AC 0.